ABSTRACT

The present invention relates to nanofiltration and reverse osmosis membranes that may be used in a number of commercial applications in which a contaminant, such as salt, must be separated from a feed fluid, such as brackish water, to yield a purified product fluid, as well as a method for manufacturing such membranes. According to embodiments of the invention, an aqueous amine solution including an amine, an organic acid (e.g., propionic acid) and a non-amine base is applied to the surface of a porous substrate. A second solution containing an acyl halide and an organic solvent immiscible in water is then applied to the aqueous amine solution to cause interfacial polymerization to occur. The resulting membranes exhibit superior salt rejection and flux properties.